

1. *Chlorophyll a* (Chl *a*)
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 18. *Chlorophyll r* (Chl *r*)
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 23. *Chlorophyll w* (Chl *w*)
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 26. *Chlorophyll z* (Chl *z*)
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 34. *Chlorophyll ah* (Chl *ah*)
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 36. *Chlorophyll aj* (Chl *aj*)
 37. *Chlorophyll ak* (Chl *ak*)
 38. *Chlorophyll al* (Chl *al*)
 39. *Chlorophyll am* (Chl *am*)
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 69. *Chlorophyll bq* (Chl *bq*)
 70. *Chlorophyll br* (Chl *br*)
 71. *Chlorophyll bs* (Chl *bs*)
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 73. *Chlorophyll bu* (Chl *bu*)
 74. *Chlorophyll bv* (Chl *bv*)
 75. *Chlorophyll bw* (Chl *bw*)
 76. *Chlorophyll bx* (Chl *bx*)
 77. *Chlorophyll by* (Chl *by*)
 78. *Chlorophyll bz* (Chl *bz*)
 79. *Chlorophyll ca* (Chl *ca*)
 80. *Chlorophyll cb* (Chl *cb*)
 81. *Chlorophyll cc* (Chl *cc*)
 82. *Chlorophyll cd* (Chl *cd*)
 83. *Chlorophyll ce* (Chl *ce*)
 84. *Chlorophyll cf* (Chl *cf*)
 85. *Chlorophyll cg* (Chl *cg*)
 86. *Chlorophyll ch* (Chl *ch*)
 87. *Chlorophyll ci* (Chl *ci*)
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 90. *Chlorophyll cl* (Chl *cl*)
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 92. *Chlorophyll cn* (Chl *cn*)
 93. *Chlorophyll co* (Chl *co*)
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 95. *Chlorophyll cq* (Chl *cq*)
 96. *Chlorophyll cr* (Chl *cr*)
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 98. *Chlorophyll ct* (Chl *ct*)
 99. *Chlorophyll cu* (Chl *cu*)
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 101. *Chlorophyll cw* (Chl *cw*)
 102. *Chlorophyll cx* (Chl *cx*)
 103. *Chlorophyll cy* (Chl *cy*)
 104. *Chlorophyll cz* (Chl *cz*)
 105. *Chlorophyll da* (Chl *da*)
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 107. *Chlorophyll dc* (Chl *dc*)
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 109. *Chlorophyll de* (Chl *de*)
 110. *Chlorophyll df* (Chl *df*)
 111. *Chlorophyll dg* (Chl *dg*)
 112. *Chlorophyll dh* (Chl *dh*)
 113. *Chlorophyll di* (Chl *di*)
 114. *Chlorophyll dj* (Chl *dj*)
 115. *Chlorophyll dk* (Chl *dk*)
 116. *Chlorophyll dl* (Chl *dl*)
 117. *Chlorophyll dm* (Chl *dm*)
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 119. *Chlorophyll do* (Chl *do*)
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 122. *Chlorophyll dr* (Chl *dr*)
 123. *Chlorophyll ds* (Chl *ds*)
 124. *Chlorophyll dt* (Chl *dt*)
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 126. *Chlorophyll dv* (Chl *dv*)
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 132. *Chlorophyll eb* (Chl *eb*)
 133. *Chlorophyll ec* (Chl *ec*)
 134. *Chlorophyll ed* (Chl *ed*)
 135. *Chlorophyll ee* (Chl *ee*)
 136. *Chlorophyll ef* (Chl *ef*)
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1 4. The method as claimed in claim 3, the step of removing the layer of
2 germanium oxide including rising the semiconductor substrate in water.

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cont.

1 The method as claimed in claim 2, the step of stripping away the layer of
2 metallic germanium including stripping away the layer of metallic germanium
3 before performing the step of selectively etching the semiconductor substrate.

1 6. The method as claimed in claim 1, the step of depositing a layer of metallic
2 germanium including depositing the layer of metallic germanium having a
3 thickness between approximately 40 nm and approximately 500 nm.

1 7. The method as claimed in claim 1, the step of patterning the layer of metallic
2 germanium further including the steps of:
3 depositing a photo resist layer over the layer of metallic germanium;
4 exposing and developing the photo resist layer to form a photolithography
5 image; and
6 etching the layer of metallic germanium through the photolithography image.

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1 8. The method as claimed in claim 1, the step of forming a dielectric layer further
2 including the steps of:
3 forming a pad oxide layer having a thickness between approximately 5 nm and
4 approximately 30 nm over the major surface of the semiconductor
5 substrate;
6 depositing a nitride layer having a thickness between 50 nm and approximately
7 300 nm over the pad oxide layer; and
8 depositing a mask oxide layer having a thickness between 800 nm and
9 approximately 3,000 nm over the nitride layer.

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1 9. A method for fabricating a semiconductor device, comprising the steps of:
2 forming a dielectric stack over a major surface of a semiconductor substrate;
3 depositing a metallic germanium layer over the dielectric stack;
4 patterning the metallic germanium layer to form a germanium hard mask over
5 the dielectric stack;
6 etching the dielectric stack through germanium hard mask to form a dielectric
7 hard mask over the major surface of the semiconductor substrate;
8 etching the semiconductor substrate through the dielectric hard mask;
9 forming doped regions in the semiconductor substrate; and
10 forming dielectric and conductive structures over the semiconductor substrate.

1 10. The method as claimed in claim 9, further comprising the step of stripping
2 away the metallic germanium layer after the step of etching the dielectric stack
3 and before the step of etching the semiconductor substrate.

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1 11. The method as claimed in claim 10, wherein the step of stripping away the
2 metallic germanium layer includes the steps of:
3 oxidizing the metallic germanium layer; and
4 rising the semiconductor substrate in water.

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1 12. The method as claimed in claim 9, wherein the step of depositing a metallic
2 germanium layer includes depositing the metallic germanium layer having a
3 thickness between approximately 40 nm and approximately 500 nm in a
4 chemical vapor deposition process.

1 13. The method as claimed in claim 9, wherein the step of patterning metallic
2 germanium layer further includes the steps of:
3 depositing a photo resist layer over the metallic germanium layer;
4 exposing and developing the photo resist layer to form a photolithography
5 image; and
6 etching the metallic germanium layer through the photolithography image.

14. The method as claimed in claim 9, wherein the step of forming a dielectric stack further includes the steps of:

forming a pad oxide layer having a thickness between approximately 5 nm and approximately 30 nm on the major surface of the semiconductor substrate;

depositing a nitride layer having a thickness between 50 nm and approximately 300 nm on the pad oxide layer; and

depositing a mask oxide layer having a thickness between 800 nm and approximately 3000 nm on the nitride layer.

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1 18. The method as claimed in claim 16, further comprising the step of stripping
2 away the germanium hard mask after etching the dielectric stack and before
3 etching the semiconductor wafer.

1 ^{Sub} 19. The method as claimed in claim 18, wherein the step of stripping away the
2 germanium hard mask includes the steps of:
3 oxidizing the layer of metallic germanium to convert the layer of metallic
4 germanium into a layer of germanium oxide; and
5 removing the layer of germanium oxide.

1 20. The method as claimed in claim 19, wherein the step of removing the layer of
2 germanium oxide includes rising the semiconductor wafer in water.

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